

REMARKS

Reconsideration and withdrawal of the rejections set forth in the above-mentioned Office Action in view of the foregoing amendments and the following remarks are respectfully requested.

Claims 1-3, 5, 6, 14-18, 25, and 26 are now pending in this application, with Claims 1 and 14 being independent. Claims 1-3, 6, 14-16, 18, 25, and 26 have been amended herein. Claims 4, 7-13, and 19-24 have been canceled without prejudice or disclaimer.

Claims 1, 2, 4, 6-9, 11-15, 18, 19, 21, 23, and 24 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,400,349 (Nagumo). Claims 1, 2, 4, 7-9, 11, 13-15, 19-21, and 24-26 were rejected under 35 U.S.C. § 102 as being anticipated by Japanese Patent Publication No. 2000-246900 (Matsuno). Claims 3, 10, 16, and 22 were rejected under 35 U.S.C. § 103 as being unpatentable over Matsuno in view of U.S. Patent No. 5,886,713 (Okada et al.). Claims 5 and 17 were rejected under § 103 as being unpatentable over Matsuno in view of U.S. Patent Application Publication No. 2003/0038617 (Yaklin). Claims 6, 12, 18, and 23 were rejected under § 103 as being unpatentable over Matsuno in view of Nagumo. These rejections are respectfully traversed.

In the claimed arrangement, the printing elements, switching elements and constant current sources are connected in the order of the printing elements, the switching elements, and the constant current sources from the first (higher voltage) power supply line to the second (lowervoltage) power supply line. That is, the printing elements are arranged closest to the higher

voltage power supply line, and the switching elements and constant current sources are arranged upstream of the lower voltage supply line. Accordingly, the size of the NMOS transistors can be downsized. As a result, the size of the inkjet printhead and substrate of the printhead can be decreased even if a reference voltage circuit and a current generation circuit are provided.

Nagumo is directed to a printer or display device including a driving circuit for driving elements such as light sources or heaters. As shown in Figure 2, the LED driving circuit includes a current limiting transistor M_1 and a switching transistor M_2 . These transistors in Nagumo are p-channel MOS transistors, not NMOS transistors, as is recited in the independent Claims 1 and 14. Further, the driving circuit in Nagumo connects the current-limiting transistor M_1 , switching transistor M_2 and the LED LD_1 in the listed order from the higher voltage supply line V_{DD} to the ground line. Such differs from the present invention in which the printing elements, switching elements, and constant current sources are connected in series in the listed order from the first power supply line to the second power supply line, as is recited in independent Claims 1 and 14.

Thus, Nagumo fails to disclose or suggest important features of the present invention recited in the independent claims.

Matsuno describes a recording head having a heater array RH and an NMOS transistor M_2 for driving a heater array. Although the heater array RH and the transistors M_2 are provided in series in the listed order from the higher voltage supply line VH to the lower voltage supply line (ground), the NMOS transistor M_2 in Matsuno operates as both the switching element

and the constant current source. Because the switching element and the constant current source are not separately provided in series in Matsuno, it is difficult to control the current to be constant because the transistor M_2 is switched. Accordingly, Matsuno also fails to disclose or suggest arranging an order of printing elements, switching elements, and constant current sources from a first power supply line to a second power supply line, as is recited in the independent claims.

Thus, Matsuno also fails to disclose or suggest important features of the present invention recited in the independent claims.

Okada et al. and Yaklin have also been reviewed, but are not believed to remedy the deficiencies of the citations noted above with respect to the independent claims.

Thus, Claims 1 and 14 are patentable over the citations of record. Reconsideration and withdrawal of the § 102 and § 103 rejections are respectfully requested.

For the foregoing reasons, Applicant respectfully submits that the present invention is patentably defined by independent Claims 1 and 14. Dependent Claims 2, 3, 5, 6, 15-18, 25, and 26 are also allowable, in their own right, for defining features of the present invention in addition to those recited in their respective independent claims. Individual consideration of the dependent claims is requested.

Applicant submits that the present application is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action, and an early Notice of Allowability are requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by

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Respectfully submitted,

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